APPLIANCES

SIMPLIFIED NEAR POINT RULE*

BY

JOHN FOSTER

Leeds

The measurements of the near point of accommodation which provide today's standards were made by Duane (1922) with a Prince's rule modified by cutting a small notch to fit the root of the nose. Although Duane's point of reference was the spectacle plane 13 mm. in front of the cornea, he does not say how he achieved accurate alignment with this.

Pascal (1950) agreed that this plane, or some facial feature in line with it, is still the most logical from which to measure the accommodation and convergence. Most rules designed since 1922 for measuring the near-point of accommodation and convergence, are designed to measure indirectly by resting on the brow, the cheek-bone, or the nose. They employ a slider to carry the test chart and are of a length and form which make them inferior to a tape-measure for the most frequently required accommodation measurement: the distance from the spectacle plane at which a Jaeger type can be read most comfortably.

In 1951, with aim of reducing wasted movement in the process of refraction, I adopted a simplified rule designed by Berens (1947) which, although it carries a slider, can be used for this particular measurement. The reading chart in this case was of a specially reduced form, bearing a selection of unconnected words of diminishing size (conforming to the sizes of 24 pt., 18 pt., 14 pt., 12 pt., 10 pt., 8 pt., 6 pt., and 5 pt. Times roman type, as suggested by F. W. Law and accepted by the Council of the Faculty of Ophthalmology, 1952, 1953), mounted on the back of a Thorton's heterophoria test. After using Berens's rule for some time, I felt it might be further simplified and the following instrument was designed.

Specification.—A four-sided rod 50 cm. long x 1 cm. square with rounded ends, is constructed of Duralumin for lightness; the solid section gives the durability required for clinic use. The surface is anodized black, and the zero end and scale figures marked in

*Received for publication July 9, 1954.
†This was made for me by Allied Instrument Manufacturers Ltd.
silver. The latter, with the exception of those for indicating convergence, are so arranged as to be readable whether the observer is seated on the right or the left of the patient. Three of the sides are marked conventionally, that is to say in centimetres, dioptres, and the equivalent age. The fourth side has markings similar to those of the Livingston binocular gauge (—) indicating the normal, reduced, and defective zones for the near point of objective convergence. The rod can be moved from its permanent place on the table in front of the trial case with a single movement of the hand and arm to measure the distance between the spectacle plane and the reading test (Figure). When used for measurement of convergence the rod is placed at the root of the nose, a small bright object being brought near to the eyes under the rod until the eye diverges. The design aims at absolute simplicity and lightness. As Ollyett said in Kipling's The Village that voted the Earth was Flat: "The secret of power is not the big stick, it's the liftable stick."

Those who prefer to use a slider rather than a Jaeger type with the rule described above, can easily attach to the rule a slider carrying a double-sided card—one side bearing words similar to those described above for the near vision test, plus a small fine straight line for Duane's test for accommodation, and the other side bearing a thicker vertical black line for tests of objective convergence.

REFERENCES